

What is claimed is:

1. A toner having a single-layered structure as said toner is manufactured through the suspension polymerization of 5 binder resin monomers, molecular weight controlling agents, pigments, charge control agents, dispersion agents, anionic surfactants, waxes, polar grafting agents, and hydrophilic monomers.
- 10 2. A toner having a double-layered structure as said toner is manufactured through the suspension polymerization of binder resin monomers, molecular weight controlling agents, pigments, charge control agents, dispersion agents, anionic surfactants, waxes, polar grafting agents, and hydrophilic 15 polymers.
3. A toner having a double-layered structure by forming a single-layered structure through the suspension polymerization of binder resin monomers, molecular weight 20 controlling agents, pigments, charge control agents, dispersion agents, anionic surfactants, waxes, polar grafting agents, and hydrophilic monomers, and further manufacturing a shell, which is a rigid layer, by inputting a styrene-group monomer and a cross-linking agent over said 25 single-layered structure.

4. A toner having a triple-layered structure by forming a double-layered structure through the suspension polymerization of binder resin monomers, molecular weight controlling agents, pigments, charge control agents, 5 dispersion agents, anionic surfactants, waxes, polar grafting agents, and hydrophilic polymers, and further manufacturing a shell, which is a rigid layer, by inputting a styrene-group monomer and a cross-linking agent over said 10 single-layered structure.

5. The toner according to Claim 1 or 3, wherein said hydrophilic monomers are one or more kinds of compounds selected from the group consisting of acrylic acid, methyl 15 methacrylate, and acetate; and the content of said hydrophilic monomer is 0.1 to 20 parts by weight with respect to the total weight of the monomer mixture.

6. The toner according to Claim 2 or 4, wherein said 20 hydrophilic polymers are one or more kinds of polar polymers selected from the group consisting of polyester-group and styrene-acryl-group polymers; and the content of said hydrophilic polymers is 0.1 to 20 parts by weight with respect to the total weight of the monomer mixture.

7. The toner according to any of Claims 1 through 4, wherein said polar grafting agents are one or more kinds of compounds selected from the group consisting of ethylene dimethacrylate, ethylene glycol dimethacrylate, diethylene glycol diacrylate, 1,6-hexamethylene diacrylate, allyl methacrylate, 1,1,1-trimethylol propane triacrylate, and triallyl amine; and the content of said polar grafting agents is 0.001 to 10 parts by weight with respect to the total weight of the monomer mixture.

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8. The toner according to any of Claims 1 through 4, wherein said binder resin monomers are one or more kinds of compounds selected from the group consisting of aromatic-vinyl-group, acrylate-group, methacrylate-group, diene-vinyl-group, acidic-olefin-group, and basic-olefin-group monomers; and the content of said binder resin monomers is 0.1 to 20 parts by weight with respect to the total weight of the monomer mixture.

20 9. The toner according to any of Claims 1 through 4, wherein:

25 said pigments are one or more kinds of inorganic pigments selected from the group consisting of metallic-powder-type, metal-oxide-type, carbon-type, sulfide-type, chrome-salt-type, and ferrocyanide-type pigments; or

one or more kinds of organic pigments selected from the group consisting of azo-type, acidic-pigment-type, basic-pigment-type, mordant-pigment-type, phthalocyaninacridone-type, and dioxane-type pigments;

5 and

the content of said pigments is 1 to 20 parts by weight with respect to the total weight of the monomer mixture.

10 10. The toner according to any of Claims 1 through 4, wherein:

said charge control agents are one or more kinds of cationic charge control agents selected from the group consisting of nigrosine-type electron acceptor pigments, 15 highly aliphatic metallic salts, alkoxy amines, chelates, quarternary ammonium salts, alkyl amides, fluorinated activation agents, and metallic salts of naphthalic acid;

or

one or more kinds of anionic charge control agents 20 selected from the group consisting of electron acceptor organic complexes, chlorinated paraffins, chlorinated polyesters, polyesters containing an excessive amount of acids, sulfonyl amine of copper phthalocyanine, and styrene-acryl-group polymers including sulfonic acid 25 radicals; and

the content of said charge control agents is 0.01 to 20 parts by weight with respect to the total weight of the monomer mixture.

5 11. The toner according to any of Claims 1 through 4,
wherein:

10 said dispersion agents are one or more kinds of inorganic dispersion agents selected from the group consisted of calcium phosphates, magnesium salts, hydrophilic silica, hydrophobic silica, and colloidal silica; or

15 one or more kinds of water-soluble organic polymer dispersion agents selected from the group consisting of one or more kinds of non-ionic polymer dispersion agents selected from the group consisting of poly(oxyethylene) alkyl ethers, poly(oxyalkylene) alkyl phenol ethers, sorbitan fatty acid esters, poly(oxyalkylene) fatty acid esters, glycerine fatty acid esters, poly(vinyl alcohols), alkyl cellulose, and poly(vinyl pyrrolidone); and one or 20 more kinds of ionic polymer dispersion agents selected from the group consisting of poly(acryl amides), poly(vinyl amine), poly(vinyl amine) N-oxide, polyvinyl ammonium salt, polydialkyldiallyl ammonium salts, polyacrylic acid, polystyrene sulfonic acid, polyacrylic acid salt, 25 polystyrene sulfonic acid salt, and polyaminoalkyl acrylic

acid salts; and

the content of said dispersion agents is 0.01 to 10 parts by weight with respect to the total weight of the monomer mixture.

5 12. The toner according to any of Claims 1 through 4, wherein said anionic surfactants are one or more kinds of compounds selected from the group consisting of fatty acid salts, alkyl sulfuric acid ester salts, alkylallyl sulfuric acid ester salts, dialkyl sulfosuccinates, and alkyl phosphates; and the content of said anionic surfactants is 10 0.001 to 20 parts by weight with respect to the total weight of the aqueous solution.

15 13. The toner according to any of Claims 1 through 4, wherein:

said waxes are one or more kinds of petroleum refined waxes selected from the group consisting of paraffin waxes, microcrystalline waxes, and ceresin wax;

20 natural wax which is the carnauba wax; or one or more kinds of synthetic waxes selected from the group consisting of polyethylene and polypropylene; and the content of said waxes is 0.01 to 30 parts by weight with respect to the total weight of the monomer 25 mixture.

14. The toner according to any of Claims 1 through 4, wherein said molecular weight controlling agents are one or more kinds of mercaptane-group compounds selected from the 5 group consisting of t-dodecyl mercaptane and n-dodecyl mercaptane; and the content of said molecular weight controlling agents is 0.1 to 8 parts by weight with respect to the total weight of the monomer mixture.

10 15. The toner according to Claim 3 or 4, wherein the content of said styrene-group monomer and the content of said cross-linking agent are 1 to 30 parts by weight and 0 to 5 parts by weight, respectively.